PBW

Consulting Engineers and Scientists

PASTOR, BEHLING & WHEELER, LLC
2201 Double Creek Drive, Suite 4004
Round Rock, TX 78664

Tel (512) 671-3434
Fax (512) 671-3446

February 11, 2008
(PBW Project No. 1352)

VIA OVERNIGHT DELIVERY

Mr. Gary Miller, Remedial Project Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-AP)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Proposed Phase 4 Groundwater Investigation Activities, Gulfco Marine Maintenance Site, Freeport, Texas

Dear Mr. Miller:

Per our previous discussions, this letter provides validated groundwater data for monitoring well NE3MW30B, sampled as part of the Remedial Investigation/Feasibility Study (RI/FS) at the subject site (the Site), and proposes Phase 4 groundwater investigation activities to be performed on the basis of those data. This information is provided by Pastor, Behling & Wheeler, LLC (PBW) on behalf of LDL Coastal Limited LP (LDL), Chromalloy American Corporation (Chromalloy) and The Dow Chemical Company (Dow). In accordance with Paragraph 52 of the amended Unilateral Administrative Order for the Site, effective January 31, 2008, I certify that I have been fully authorized by these Respondents to submit these documents and to legally bind these Respondents thereto.

MONITORING WELL NE3MW30B GROUNDWATER DATA SUMMARY

Phase 3 groundwater investigation activities were proposed in an October 12, 2007 letter to you and were approved (with modifications) by your letter dated November 8, 2007. A revised letter incorporating your modifications to the proposed Phase 3 activities was submitted on November 30, 2007. Phase 3 field activities, which were performed during November and December 2007, included the following:

- Installation, development and sampling of monitoring well NE3MW30B within the Zone B water-bearing unit in the area north of Marlin Avenue (the North Area), as shown on Figure 1;
- Collection of a soil sample from the boring for NE3MW30B from the depth interval where a sheen indicating the presence of a non-aqueous phase liquid (NAPL) was observed within the soil core;

826397

- Hydraulic testing of three monitoring wells (ND4MW03, NE1MW04, and SJ1MW15) within the Zone A water-bearing unit;
- Sampling of ten Zone A monitoring wells for selected volatile organic compounds (VOCs) and selected natural attenuation screening parameters (a second sampling event for these wells and parameters will be performed during the first quarter 2008);
- Evaluation of the possible presence of NAPL within monitoring wells; and
- Measurement of water levels in Site monitoring wells and staff gauges.

Evaluations for the possible presence of NAPL in monitoring wells were performed on November 7, 2007 and December 3, 2007. The presence of NAPL was not identified in any monitoring well during those evaluations. Water-level elevations were also measured on these dates. These elevation data were used to construct the potentiometric surface maps for Zone A and Zone B. The November 7, 2007 Zone A potentiometric surface map (Figure 2) differs from maps for previous water-level monitoring events and does not show a consistent groundwater flow direction. The December 3, 2007 Zone A potentiometric surface map (Figure 3) indicates groundwater flow conditions similar to those observed during previous water-level measurement events, that is flow in the North Area generally toward the northwest in the vicinity of the former surface impoundments, and flow generally to the south or southeast in areas to the south. Both the November 7, 2007 and December 3, 2007 Zone B potentiometric maps (Figures 4 and 5, respectively) suggest a northwesterly groundwater flow direction. This direction is different from the easterly Zone B gradient observed on June 6, 2007 and September 6, 2007, as indicated on Figures 4 and 5 of my November 30, 2007 letter to you.

Based on the detection of elevated VOC concentrations in the groundwater sample from well NE3MW30B and the resultant need for additional groundwater investigations (described below), validation of the NE3MW30B data were performed prior to the validation of other Phase 3 groundwater data. The NE3MW30B data are summarized herein; other Phase 3 groundwater data will be described in a subsequent submittal. The NE3MW30B data are listed in Table 1. As indicted therein, several VOCs were detected at concentrations exceeding their respective Preliminary Screening Values (PSVs) (also listed in Table 1). Due to sample dilution requirements, the Sample Detection Limits (SDLs) for several other VOCs were greater than their PSVs. No semi-volatile organic compounds (SVOCs) or metals were detected at concentrations exceeding their respective PSVs.

PROPOSED PHASE 4 GROUNDWATER INVESTIGATION ACTIVITIES

Additional Zone B Investigation

Monitoring Well Installation, Development and Sampling

Based on the elevated VOC concentrations detected in the NE3MW30B groundwater sample and the aforementioned easterly Zone B groundwater gradient observed on June 6, 2007 and September 6, 2007, installation of an additional Zone B well, east of NE3MW30B, is proposed. The proposed location of this well, designated as NE4MW31B, is shown on Figure 1. This proposed well will be installed as the other Zone B wells at the site; that is inside an isolation casing installed to the confining clay below Zone A and grouted in place prior to deeper boring advancement and well construction. The maximum well screen length will be 10 feet. However, if the Zone B sand is more than 10-feet thick at this location, the screen will be set so that the most permeable sand intervals, based on visual assessment, are included, and any identified NAPL zones are included; but if the best sand intervals and any NAPL zones can not all be

covered within the 10-foot screen, then the screen design will ensure that the NAPL zones are included. After construction, NE4MW31B will be developed and sampled as described in the RI/FS Work Plan (the Work Plan) and the Field Sampling Plan (FSP). The groundwater sample for this well will be analyzed for the parameters listed in Table 2.

Hydraulic Testing

Based on the PSV exceedences in NE3MW30B, it is proposed that hydraulic testing be performed on the three unaffected Zone B monitoring wells (ND4MW24B, NG3MW25B and OMW27B) to evaluate the hydraulic characteristics of this unit. Hydraulic testing and data analysis will be performed as described in Section 5.5.3 of the FSP.

Zone C Investigation

Section 5.6.5.g of the Work Plan specifies that "Should the concentration of any COI (chemical of interest) at a groundwater sample location exceed a PSV, then a minimum of three additional groundwater samples will be collected from the next underlying water-bearing unit." The PSV exceedences in the NE3MW30B groundwater sample represent the only exceedences in the Zone B groundwater unit (as noted above, previously installed Zone B wells ND4MW24B, NG3MW25B and OMW27B had no exceedences) and thus these data necessitate the investigation of the next underlying water-bearing unit, hereinafter referred to as Zone C. Consistent with procedures specified in the Work Plan and the FSP, traditional monitoring wells installed in Zone C would require a triple-casing well design with isolation casings installed through the overlying Zone A and Zone B water-bearing units.

In light of the difficulties associated with installation of traditional triple-cased wells and, as previously discussed with you, an alternative approach for investigation of Zone C is proposed. This alternative approach includes the following:

- Advancement of four borings using a Cone Penetrometer equipped with a Membrane Interface Probe (MIP) to Zone C at the proposed locations shown on Figure 1;
- Back grouting of the Cone Penetrometer Testing (CPT) borings and subsequent installation of adjacent small-diameter piezometers to allow evaluation of the Zone C groundwater potentiometric surface;
- Subsequent measurement of water levels in the piezometers and evaluation of the Zone C potentiometric surface; and
- Installation, development and sampling of a traditional triple-cased Zone C monitoring well (to be designated as MW32C) with the location to be determined on the basis of the MIP and Zone C potentiometric data.

Details of these proposed activities are described below.

CPT Boring Advancement and Piezometer Installation

The four proposed CPT borings will be advanced using a track-mounted CPT unit. The CPT probe will be combined with an MIP probe to provide a real-time indication of the possible

presence of VOCs in the subsurface at the CPT boring locations. The MIP probe is comprised of a semi-permeable membrane installed in a heater block located immediately above the cone penetrometer. The heater creates a pressure gradient that causes VOCs to diffuse across the membrane from where they are swept by a carrier gas to a chemical detector (e.g., electron capture detector). Detector responses are measured as the probe is advanced and are plotted by depth upon completion of each probe sounding.

The CPT borings will be advanced to the inferred base of the Zone C sand (as indicated by cone resistance and friction resistance data measured by the cone penetrometer) or refusal. Upon reaching the target depth (or upon refusal), the CPT probe will be withdrawn and the probe hole will be backfilled with a cement-bentonite grout emplaced by tremie pipe from the bottom of the hole to the surface. Using the estimated lithology from the CPT boring, hollow push rods with a disposable tip will be advanced to the Zone C target depth in a separate borehole adjacent to each CPT boring. A small diameter (¾-inch or smaller) piezometer will then be installed through the push rods. The push rods will be withdrawn from the boring leaving the disposable tip and piezometer materials in place. If possible, the piezometer will be installed to the base of Zone C. If the borehole is not able to be advanced to the base of Zone C, the piezometer will be installed to greatest depth within Zone C to which the borehole can be advanced. The piezometer will be constructed with a maximum 10-foot screen length with a pre-packed filter pack and bentonite seal. A shorter screen length may be used as appropriate to correspond to the thickness of the Zone C sand or the depth to which the borehole may be able to penetrate into Zone C. The annular space above the piezometer seal will be filled with a cement-bentonite grout. Each piezometer will be completed above grade with locking protective steel casing within a 2 foot by 2 foot well pad.

Following construction of the CPT piezometers, a round of water level measurements will be collected to allow evaluation of the groundwater flow direction in Zone C. This information, in conjunction with the MIP data, will be used to identify a proposed location for MW32C. The proposed location will be provided to you along with the MIP data and a Zone C potentiometric surface map. Following your concurrence with the proposed location, MW32C will be installed as described below.

Monitoring Well Construction, Development and Sampling

The boring for the MW32C will be advanced to identify the top and base of Zone C (projected total boring depth of approximately 70 feet below grade). The specific design for the well will be determined in the field based on the observed lithology with the goal of screening the well at the base of Zone C and isolating the well from potential impacts from Zones A and B. The maximum well screen length will be 10 feet. However, if the Zone C sand is more than 10-feet thick, the screen will be set so that the most permeable sand intervals, based on visual assessment, are included, and any identified NAPL zones are included; but if the best sand intervals and any NAPL zones can not all be covered within the 10-foot screen, then the screen design will ensure that the NAPL zones are included. In order to minimize the potential for downward migration of COIs from Zones A and B as a result of well installation activities, an isolation casing (14-inch diameter) will be installed to the confining clay below Zone A (anticipated depth of approximately 20 feet) and grouted in place prior to boring advancement below Zone A. A second isolation casing (10-inch diameter) will be installed inside this casing to the confining clay below Zone B (anticipated depth of approximately 35 feet) and grouted in place prior to deeper boring advancement and well construction. Should visual indications of chemical staining/sheen or NAPLs be observed within the recovered soil core for the Zone A or Zone B isolation casing

borings for MW32C, the proposed well will be relocated outside of the area where such conditions are encountered. After construction, MW32C will be developed and sampled as described in the Work Plan and the FSP. The groundwater sample for this well will be analyzed for the parameters listed in Table 2.

Thank you for the opportunity to submit this information. We look forward to your approval of these proposed activities, so we can continue to move forward with the expeditious completion of this project.

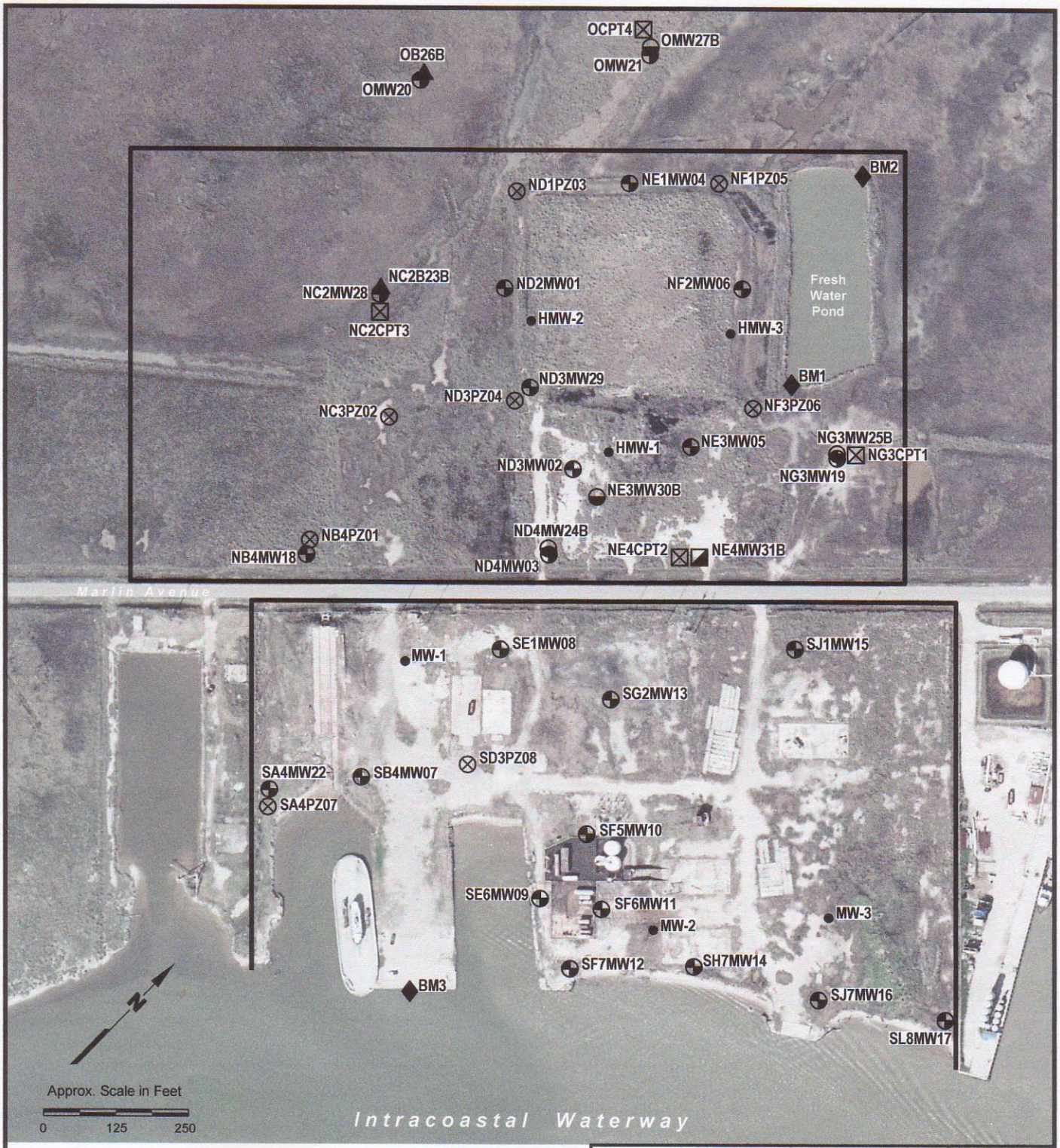
Sincerely,

PASTOR, BEHLING & WHEELER, LLC

Eric F. Pastor, P.E.
Principal Engineer

cc: Ms. Luda Voskov - Texas Commission on Environmental Quality
Mr. Robert L. Iuliucci - Sequa Corporation
Mr. Brent Murray – Environmental Quality, Inc.
Mr. Rob Rouse - The Dow Chemical Company
Mr. Donnie Belote – The Dow Chemical Company
Mr. Allen Daniels - LDL Coastal Limited, LP
Mr. F. William Mahley - Strasburger & Price, LLP
Mr. James C. Morriss III - Thompson & Knight, LLP
Ms. Elizabeth Webb - Thompson & Knight, LLP

FIGURES



EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Monitoring Well Location - Zone A
- Temporary Piezometer - Zone A
- Staff Gauge
- Previous Monitoring Well Location
- Monitoring Well Location - Zone B
- Soil Boring Location - Zone B
- Proposed Zone B Monitoring Well Location
- Proposed Zone C CPT Piezometer Location

Source of photo: H-GAC, Texas aerial photograph, 2004.

GULFCO MARINE MAINTENANCE
FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 1

MONITORING WELL LOCATIONS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2008	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

Source of photo: H-GAC, Texas aerial photograph, 2004.

EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Monitoring Well Location Zone A
- Previous Monitoring Well Location
- Staff Gauge
- (1.32) Water-Level Elevation (Ft AMSL) Measured 11/07/07
- (NM) Not Measured
- 1.5 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Note:
Staff gauge measurements (Intracoastal Waterway and Fresh Water Pond) included for reference only and not used to construct potentiometric surface contours.

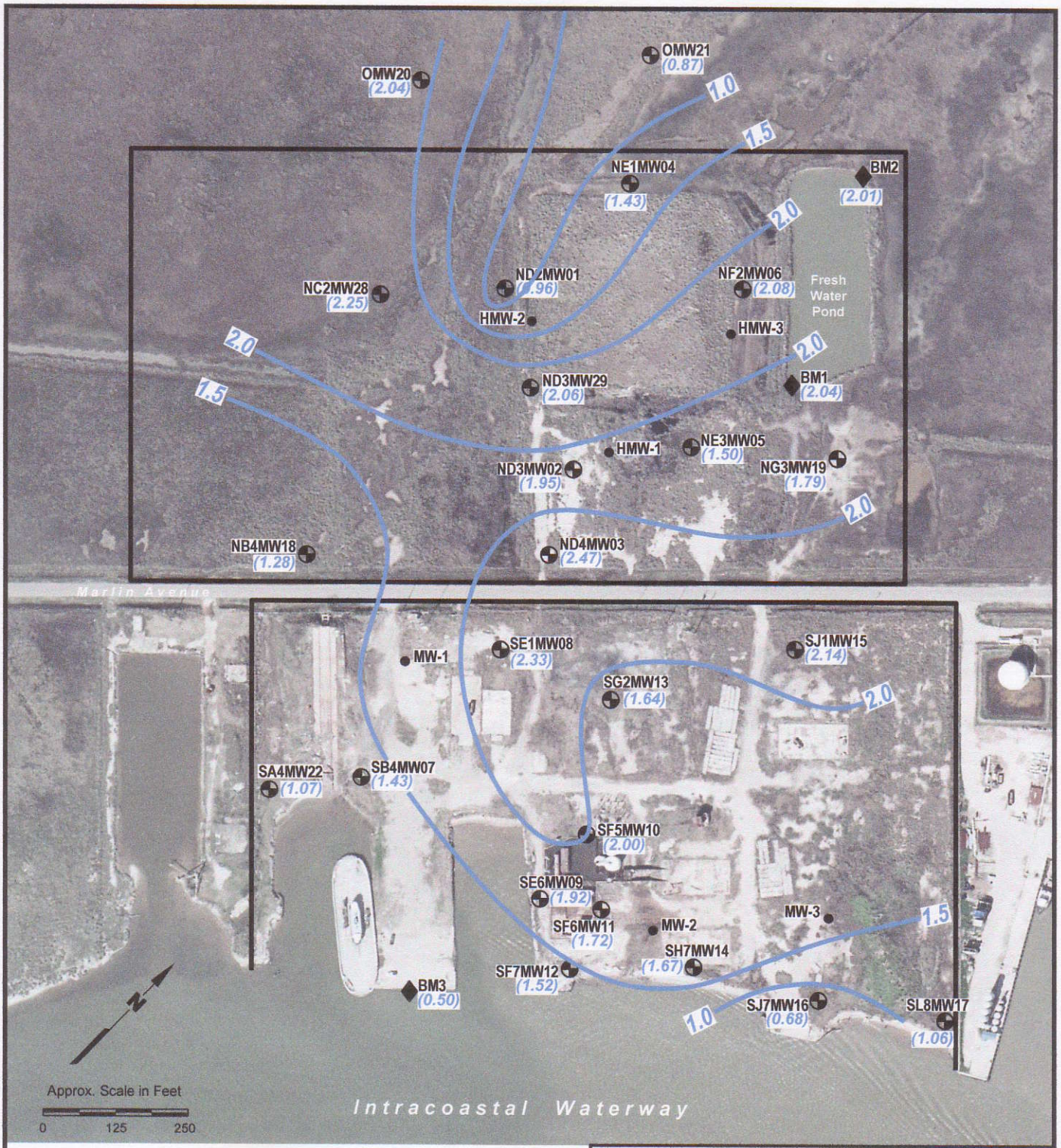
GULFCO MARINE MAINTENANCE
FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 2

ZONE A POTENTIOMETRIC SURFACE NOVEMBER 7, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: DEC., 2007	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- Monitoring Well Location Zone A
- Previous Monitoring Well Location
- Staff Gauge
- (1.52) Water-Level Elevation (Ft AMSL) Measured 12/03/07
- —1.5— Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Note:
Staff gauge measurements (Intracoastal Waterway and Fresh Water Pond) included for reference only and not used to construct potentiometric surface contours.

Source of photo: H-GAC, Texas aerial photograph, 2004.

GULFCO MARINE MAINTENANCE
FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 3

ZONE A POTENTIOMETRIC SURFACE DECEMBER 3, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: DEC., 2007	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- (1.92) Water-Level Elevation (Ft AMSL) Measured 11/07/07
- Monitoring Well Location - Zone B
- 1.6 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.2 Ft

Source of photo: H-GAC, Texas aerial photograph, 2004.

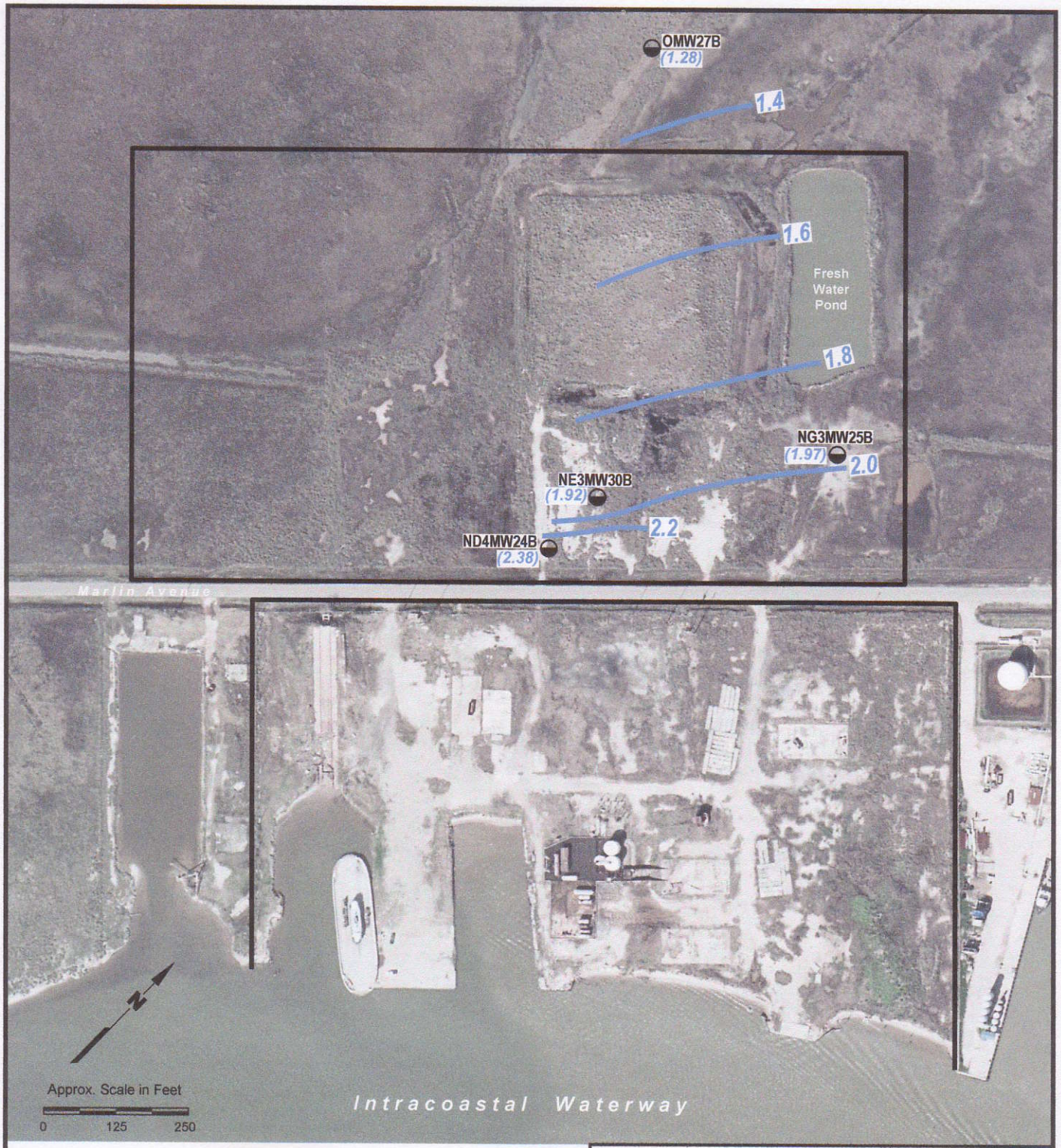
GULFCO MARINE MAINTENANCE
FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 4

ZONE B POTENTIOMETRIC SURFACE NOVEMBER 7, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: DEC., 2007	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- (2.38) Water-Level Elevation (Ft AMSL) Measured 12/03/07
- Monitoring Well Location - Zone B
- 2.0 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.2 Ft

Source of photo: H-GAC, Texas aerial photograph, 2004.

GULFCO MARINE MAINTENANCE
FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 5

ZONE B POTENTIOMETRIC SURFACE DECEMBER 3, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: DEC., 2007	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

TABLES

Table 1 - Monitoring Well NE3MW30B Groundwater Data

Sample Location	Analytical Parameter	Concentration (mg/L)	Preliminary Screening Value (mg/L)[1]
NE3MW30B	1,1,1-Trichloroethane	**64**	20
	1,1-Dichloroethene	**10.2J**	0.7
	1,2,3-Trichloropropane	**45.7**	0.029
	1,2-Dichloroethane	**176**	0.05
	1,2-Dichloropropane	<0.499	0.5
	Benzene	**<0.921**	0.5
	Carbon tetrachloride	**<0.621**	0.5
	cis-1,2-Dichloroethene	<0.768	7
	Ethylbenzene	<0.387	70
	Methylene chloride	**738**	0.5
	Tetrachloroethene	**23.8J**	0.5
	Toluene	<0.466	100
	Trichloroethene	**170**	0.5
	Vinyl chloride	**<0.817**	0.2
	Anthracene	<0.0001	2,200
	Naphthalene	<1.84	57
	Phenanthrene	0.00576	220
	Pyrene	<0.00009	220
	Nickel	<0.00084	150
	Thallium	<0.0038	0.2

Notes:
(1) From Table 18 of RI/FS Workplan (human health PSVs only).
(2) Data qualifiers: J = estimated value.
(3) Bolded values and detection limits exceed preliminary screening value.
(4) Groundwater sample collected December 3, 2007.

Table 2 - Proposed Sample Analyses

Sample Location	Analytical Parameter
NE4MW31B	1,1,1-Trichloroethane 1,1-Dichloroethene 1,2,3-Trichloropropane 1,2-Dichloroethane Benzene Carbon tetrachloride cis-1,2-Dichloroethene[1] Methylene chloride Tetrachloroethene Trichloroethene Vinyl chloride
MW32C	1,1,1-Trichloroethane 1,1-Dichloroethene 1,2,3-Trichloropropane 1,2-Dichloroethane Benzene Carbon tetrachloride cis-1,2-Dichloroethene[1] Methylene chloride Tetrachloroethene Trichloroethene Vinyl chloride Total Dissolved Solids

Note:

[1]Cis-1,2-dichloroethene is included in the proposed analyte list as a degradation product of trichloroethene. The cis-1,2-dichloroethene concentration in NE3MW30B did not exceed its Preliminary Screening Value (PSV).